NNSA

Los Alamos NATIONAL LABORATORY EST.1943

Ten-Year Site Plan
FY 2008 - FY 2017

May be exempt from public release under the Freedom of Information Act (5 U.S.C. 552),

Exemption number and category: Exemption 2, Circumvention of Statute;

Exemption 5, Privileged Information

Department of Energy review required before public release.

Name/Org: Site Planning and Project Initiation Group (SPPI)

Date: January 9, 2007

Guidance (if applicable): n/a

LA-CP-07-0039

Future State

Highlights of the Laboratory's approach to address the Complex 2030 challenge include the following:

- Constructing the CMRR, a new research facility that will consolidate Special Nuclear Material (SNM) Analytical Chemistry, Material Characterization (AC/MC), actinide research and development capabilities and SNM storage capabilities. The CMRR will support plutonium operations at the Laboratory, closure of the existing Chemistry and Metallurgy Research (CMR) facility, and the removal of Security Category I/II quantities of plutonium from Lawrence Livermore National Laboratory (LLNL). As such, the CMRR is essential to an effective transition towards the goals of Complex 2030 and, under aggressive Laboratory management, assumes a continued role in the consolidation efforts across the weapons complex.
- Rendering the 2nd axis of the Dual-Axis Radiographic Test (DARHT) facility fully operational to provide stereoscopic and time-sequenced views of hydrodynamic experiments vital to the stockpile stewardship effort in the absence of underground testing
- Refurbishing the Los Alamos Neutron Science Center (LANSCE) as a modern and operationally reliable infrastructure for a variety of experimental physics and stockpile stewardship applications
- Upgrading plutonium facilities at Technical Area-55 (TA-55) to support interim pit production requirements for the RRW program under the Complex 2030 vision

Highlights of Future State

Complex 2030 Weapons Program

- Complete CMRR
- DARHT fully operational
- Refurbish LANSCE
- Upgrade TA-55 plutonium facilities

Long-Term Institutional Development

- Footprint reduction
- Enhanced physical security infrastructure
- Enhanced cyber-security initiative
- Radiological Sciences Institute
- Non-NNSA physical infrastructure
- Upgraded real property management
- Long-term environmental stewardship

Some of the Laboratory's long term institutional development initiatives include the following:

- To meet the requirements of managing the physical infrastructure, the Laboratory is implementing a significant footprint reduction effort over the next two years of approximately 2 million gross square feet of Laboratory facility space. This initiative will build on the ongoing efforts to consolidate nuclear facilities and shutdown aging facilities at the Laboratory; and will eliminate a much greater number of degraded and under-utilized facilities that have a limited value for the future activities and missions of the Laboratory. Completion of the footprint reduction effort will free up funding for maintenance and recapitalization of high valued facilities and infrastructure and will position the Laboratory as a flexible and responsive supplier of research and development services to meet dynamic NNSA and non-NNSA program needs.

- To meet the evolving security requirements of a post-9/11 operations environment, the Laboratory is defining and implementing a physical security posture that is largely insensitive to changes in the site DBT. This process is well under way and will reduce the need for additional security related facilities and infrastructure over the entire TYSP planning horizon.
- The Laboratory is committing to a pilot installation of a Super Vault Type Room (VTR) to demonstrate the concept for consolidating and controlling the use of classified information while using technology to efficiently and effectively enable authorized programmatic access. The Super VTR pilot will serve as a platform from which to launch the Laboratory into a new environment of cyber security operations. This new environment will be at the leading edge, helping to define the Laboratory's cyber security future.
- The Laboratory is involved in several major forward looking physical infrastructure developments outside the Weapons Program. Among the many such efforts are development of the Radiological Sciences Institute (RSI) as an enhanced national capability to support threat reduction research and development activities, a major institutional commitment that addresses one of the Laboratory Director's "Seven Grand (Scientific) Challenges"; and planning support for the Laboratory as the fuel reprocessing facility under the Global Nuclear Energy Partnership (GNEP) next generation enhanced energy security nuclear fuel cycle.
- To meet the requirements for a vital national research and development capability focused on national security, energy, and basic sciences, the Laboratory is in the process of implementing a broad based development of capabilities and infrastructure to service non-NNSA clients in threat reduction, homeland security, energy and basic sciences. As this broader base of operations develops, it allows NNSA the ability to maintain the basic science capabilities needed to carry out future

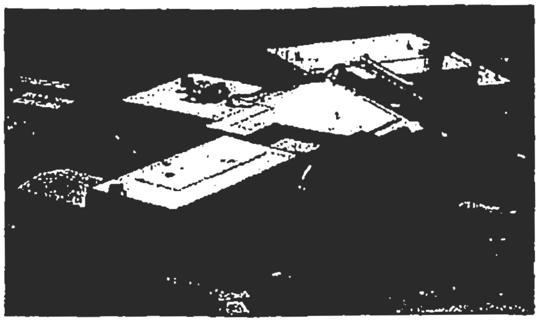
Figure ES-1: The recently completed Security Perimeter Project limits access into the Laboratory's TA-3.

missions and activities at the Laboratory, a primary requirement for effective implementation of Complex 2030 development strategies, and will ensure the Laboratory can robustly respond to Department of Energy (DOE) funding fluctuations in the future.

- The Laboratory is applying a disciplined process to reflect corrective actions from previous external and internal audits and investigations as processes and procedures for continued gain in the quality of stewardship of the site's physical infrastructure. In addition, the Laboratory is focused on implementing best practices for management of facilities and infrastructure by satisfying the requirements and intent of several reference guidelines including Executive Order 13327, Federal Real Property Asset Management; the President's Management Agenda, Real Property Asset Management Initiative; DOE Order 430.1B, Real Property Asset Management; Congressional and DOE real property reporting requirements; and by continuing to follow the recommendations of the National Research Council's Intelligent Sustainment and Renewal of Department of Energy Facilities and Infrastructure. This will enable the Laboratory to transform the current aging facility infrastructure into one that can be maintained within projected resources.
- To meet the requirements for effective long-term environmental management, the Laboratory is implementing a performance-based Environmental Management System (EMS) that meets the requirements of the International Standardization Organization (ISO) 14001 environmental standard. The EMS assures that the eventual requirements of Long-Term Stewardship and the changing requirements of environmental compliance can be met within a single compliance framework and with minimum impact on the ongoing Laboratory weapons program activities. As the Laboratory continues to decontaminate and decommission (D&D) older facilities and construct replacements, the Laboratory's EMS will provide an integrated system to ensure adequate characterization, prevent transfer or mobilization of contaminants in the environment, and ensure that chemical or radiological contaminated materials are not released to the public.

In summary, this TYSP narrates a roadmap that the Laboratory plans to follow over the next 10 year planning horizon. This roadmap ensures new foundation for Laboratory physical infrastructure that will transform the Laboratory from the Post Cold War era of Stockpile Stewardship into the Complex 2030 vision. In this way, the Laboratory can anticipate and be prepared to solve future national security technical challenges.

Weapons Engineering Tritium Facility Operations:



The WETF provides the space to perform research, development, and engineering of gas transfer systems. The facility will play a key role in the development of gas transfer systems for the RRW weapons systems and surveillance of the gas delivery systems in the legacy stockpile. The facility also provides space to store in environmental conditions gas transfers systems to study the aging of these systems in the legacy stockpile. The facility is in fair condition, and no related projects are currently required. An NNSA decision on consolidating tritium functions may impact this capability.

High Explosives Detonation Facilities Operations: These facilities provide the capability to design, develop, manufacture, and test detonator systems.

One consolidation activity under consideration is a Shock and Detonation Physics Facility which would relocate researchers from failing office and lab space at TA-40-1 and TA-40-23 to a new building at TA-22, improving synergy by collocating HE, shock wave physics, and HE systems researchers.

Los Alamos Neutron Science Center Facilities: The LANSCE MC facilities consist of a linear accelerator facility, which is a high-intensity, 0.8 megawatt (MW) proton linear accelerator; the Weapons Neutron Research (WNR) facility, where high-energy, un-moderated neutrons and protons are used for weapons-related basic and applied research; and the Lujan Center, which employs moderated spallation neutrons for condensed matter-science, engineering, and nuclear science research.

The existing LANSCE systems, especially those of the accelerator, are increasingly unreliable, are expensive to operate and maintain, and are reaching the end of their design life. Projects required to ensure continued programmatic activities include the following:

- LANSCE-R: The project is a compilation of facility and infrastructure subprojects that will focus on renovating and modernizing the existing linear accelerator and related systems
- H- RFQ: This project would focus on a new H- injector that is capable of producing approximately twice the peak current as the present injector at a reduced duty factor; the increased beam current will increase the capability of the pRad and Lujan experimental programs
- 1L Target replacement: The 1L target provides spallation neutrons to the Lujan center in support of stockpile stewardship and basic energy research; the existing target is nearing the end of its lifecycle and is plagued with numerous mechanical issues; temporary repairs have allowed for continued operation, but a permanent replacement is required

Science Campaigns

MC Science Campaign facilities are used to develop improved capabilities to assess the safety, reliability, and performance of the nuclear physics package of weapons without further underground testing. MC facilities supporting the Science Campaigns include the following:

High Explosives Science Facilities: Operations: These facilities provide the diverse experimental capabilities needed to synthesize, formulate, shape, and machine small-scale HE components as well as the ability to characterize the fundamental materials properties and behavior, small-scale sensitivity, and performance of new, current, aged, and other high explosives formulations.

Energetic Materials Characterization Facility: The EMC Facility project will design and construct a state-of-the-art facility to conduct energetic material operations and provide capabilities critical to the surveillance, surety, and safety of energetic materials related to the nation's enduring nuclear stockpile and to homeland security needs. This facility will reside in TA-22 and consist of laboratories that perform high-explosives chemistry and small-scale formulation, physical characterization of high-explosives powders and parts; and high-explosives safety testing and quality assurance. Additional office space and material storage will bring efficiency to the operation.

Inertial Confinement Fusion and High Yield Campaign

ICF Campaign facilities are used to develop laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion, and conduct weapons-related research in these environments. MC facilities supporting the ICF Campaign include the following:

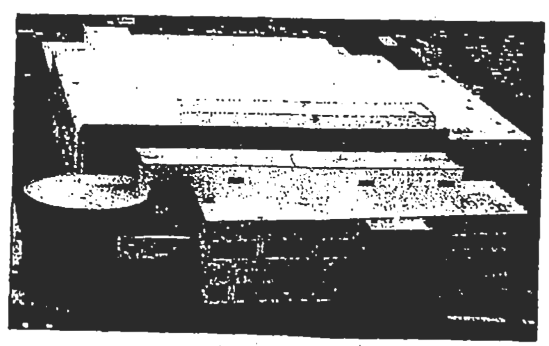
Trident Facility: The Trident facility is used for experiments requiring high-energy laser light pulses, primarily in inertial confinement fusion, high-energy density physics, and basic research. The Laboratory conducts necessary research to experimentally validate the predictive models used to assess and certify the stockpile.

The Trident Laser Enhancement project will increase Trident's short pulse capabilities for radiography of hydrodynamic targets used in the high-energy density physics program. This project is expected to be completed in FY07.

Advanced Simulation and Computing Campaign

The ASC Campaign MC facility provides leading edge, high-end simulation capabilities to meet weapons assessment and certification requirements, including weapon codes, weapons science, and platforms.

Nicholas C. Metropolis Center for Modeling and Simulation:



The Metropolis Center houses the Q supercomputer (with a peak speed of 20 trillion operations per second), which was installed in 2002 and is the major capability system at the Laboratory. During late FY06, the Laboratory began installation of the next generation of supercomputer, Roadrunner. Roadrunner will eventually be able to run a sustained Petaflop (one quadrillion operations per second) application and will significantly increase capacity computing cycles for stockpile stewardship.

A second electrical upgrade for the Metropolis Center is designed and awaiting NNSA Headquarters' approval to proceed. This upgrade will provide an additional 2.4 MW of power that is needed for the third phase of Roadrunner scheduled to be installed in January, 2008.

Pit Manufacturing and Certification Campaign

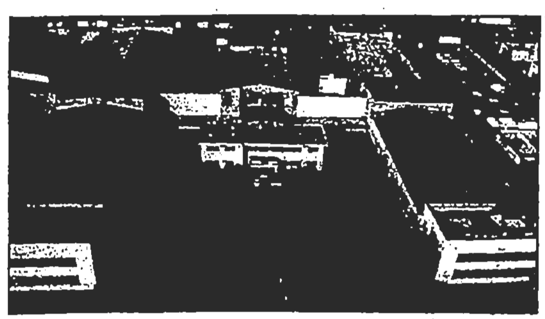
MC facilities for the PMC Campaign support restoration of the capability and capacity to manufacture pits of all types required for the nuclear weapons stockpile.

TA-55*:* Activities in support of pit manufacturing, surveillance, and certification activities housed at TA-55 include plutonium casting, fabrication, machining, and metallurgy laboratories; plutonium recovery; metal preparation; and destructive analysis and Nondestructive Analysis (NDA) laboratories. There is also a SNM storage vault.

The facilities and infrastructure at TA-55 is entering the life cycle stage when major systems are reaching the end of their useful lives. The following is a number of projects in the TA-55 area that will enable continued operation to meet programmatic requirements.

- TA-55 Reinvestment Project: This project will revitalize aging and obsolete electrical, mechanical, safety, facility controls and other selected systems
- TA-55 Radiography: This facility will house high-energy and medium energy x-ray systems to examine sealed nuclear components; this facility is critical for the Pit Manufacturing and Certification Campaign as well as surveillance programs
- NMSSUP Phase II: This project will upgrade and replace the existing physical security system at TA-55 to address the new protection strategy requirements and deteriorating physical security infrastructure
- RLWTF Upgrade: This project will construct a new facility to improve the RLW treatment capability at TA-50; the new facility will provide increased reliability and process capability to meet projected regulatory requirements for discharge
- TRU Facility: This project will provide a replacement facility to process and ship newly generated TRU waste to WIPP; the Consent Order requires that the Laboratory's existing TRU waste processing capability, located in TA-54, be closed by 2012

Chemistry and Metallurgy Research Facility:



The CMR facility serves as the primary facility for a broad spectrum of actinide, metallurgical, and materials properties testing systems of radiological components in PMC Campaigns for Category III material levels. The CMR building houses significant nuclear materials capabilities in support of programs at TA-55 including analytical chemistry, metallography, and R&D for science-based stockpile stewardship and surveillance programs.

The CMR Facility currently operates on a "run-to-replacement" philosophy in anticipation of the CMR Replacement (CMRR) project completion. At current levels of use, significant investments in the maintenance of the CMR facility's infrastructure will still be required in order to keep the CMR open until CMRR is certified operational.

The CMR will require strategic investments to reduce operating risk. The current AB will expire around 2010, and the Laboratory has initiated efforts to invest in Hazard Reduction/Wing Closure (HR/WC). The new CMRR is not expected to be fully operational until the 2013-14 time frame with the RLUOB opening in the 2009-10 time frame. Some capabilities at CMR can be moved into RLUOB and into PF-4 before 2010, thereby reducing hazards at CMR, but it is expected that some capabilities will need to be retained at CMR. The initial planning efforts for HR/WC allows for the consolidation of activities from Wings 2, 3, 4 and 5 into Wings 7 and 9, RLUOB and PF-5. Execution of HR/WC in FY05, 06 and 07 will lead to closure of Wing 4 in late FY07 or early FY08. The reduced risk profile will be needed to support an assumed conditional AB operating environment beyond 2010 until the new CMRR is fully operational.

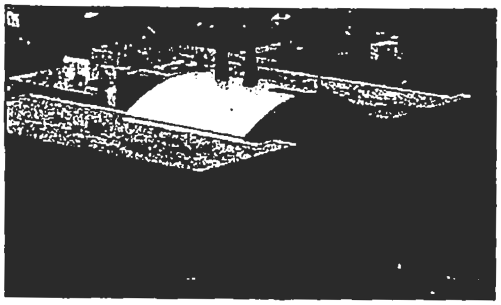
The CMRR will construct new facilities at TA-55 to house the existing CMR building capabilities and consolidate Security Category I/II laboratory work in a single area, including TA-55 radiography, to minimize the transfer of nuclear material within the complex. The project consists of two buildings, a combination radiological laboratory, utility, and office building and a Security Category I/II, Hazard Category II laboratory building. Construction of the radiological building has begun.

Beryllium Technology Facility Operations: The BTF provides the only technical capability within DOE for non-nuclear component fabrication and beryllium research and development. Operations at the BTF include alloy development, foundry operations, inspections, and nondestructive testing, joining, machining, metallography, mechanical testing, and powder operations.

The BTF is currently in good condition, and no related projects are currently required or planned, other than the Cartridge Filter House (GPP) project scheduled to be completed in FY07.

Sigma: Sigma supports large, multi-disciplinary technology base in materials fabrication science. This facility is used mainly for materials synthesis and processing, characterization, fabrication, joining, and coating of metallic and ceramic items. Other SSP activities supported by Sigma include DSW and the Science Campaigns. The Sigma facility is a candidate for replacement due to its age and poor condition. Options for a replacement facility are currently being studied.

The Materials Science Laboratory:



The MSL supports four types of experimentation: materials processing, mechanical behavior in extreme environments, advanced materials development, and materials characterization. The MSL is in excellent condition, and no related projects are currently required or planned.

Another project required to support the PMC Campaign is the Weapons Manufacturing Support Facility. This project will consolidate metals fabrication, radiological component machining and inspections, and advanced manufacturing technology development from the existing shops facilities in TA-3. Additional supported capabilities include joint test assemblies, sub-critical experiments, and hydrotests. Design is anticipated to begin in 2011.

All of the Laboratory's facilities are being evaluated for the projected longevity of mission need. Enduring facilities are those facilities with mission needs extending beyond 10 years while proposed excess facilities have a mission need of less than 10 years or are temporary structures in "poor" or "failing" condition. Consequently, investment in the enduring facilities will be prioritized with the length of mission need as the main factor.

Attachment G contains the Laboratory's approved list of MC facilities.

Table 3-1: Summary Mission Critical GSF by Program

Program	GSF
Directed Stockpile Work	696 K
Science Campaigns	6 K
Inertial Confinement Fusion and High Yield Campaign	13 K
Advanced Simulation and Computing Campaign	369 K
Pit Manufacturing and Certification Campaign	1,098 K
TOTAL	2,182 K

3.3 Future NNSA Mission, Programs, Workload and Impacts

The Laboratory's projected future PADWP missions are defined by NNSA strategic/transformation planning, fiscal guidance and direction. The SSP will require continued use of the existing and planned production and research, development, and testing facilities to support DSW and Campaign deliverables. Over the next 10-20 years, the Laboratory will exercise its unique facility, equipment, and personnel resources to provide the following capabilities required to ensure that nuclear weapons are safe, secure, and reliable:

- Design, development, and assessment of nuclear weapons
- Manufacturing, surveillance, and disposition of nuclear weapons components
  - Plutonium components
  - Uranium components
  - Tritium production and processing
  - High explosives materials and components
  - Nonnuclear components
- Assembly and disassembly of nuclear weapons
- Science and technology base to support the Nation's nuclear deterrent

These capabilities will predict performance and support design and production at the Laboratory and within the NWC for the warhead refurbishment programs, limited life component production and surveillance, and pit manufacturing and certification.

In addition to these ongoing missions, the Laboratory's weapons infrastructure will have to address several challenges and evolving programmatic needs within the nuclear weapons program. Key among these is the potential expanded manufacturing mission. Additional needs include the emerging security environment, experimental programs, and consolidation of critical NWC capabilities.

3.3.1 Future NNSA Missions and Programs—Weapons Programs Complex 2030

The 2001 Nuclear Posture Review (NPR) directed a change in the structure of the nuclear deterrent to adjust the change in the nature of the threat. The NPR called for the following:

- Changing the size, composition, and character of the nuclear stockpile in a way to reflect that the Cold War is over
- Achieving a credible deterrent with the lowest-possible number of nuclear warheads consistent with our national security needs
- Transforming the NNSA complex into a responsive infrastructure that supports the specific stockpile requirements and maintains the essential US nuclear capabilities needed for an uncertain future

In response to the NPR, NNSA developed a planning scenario that sets out their vision for the nuclear weapons complex of 2030. The scenario consists of four over-arching long-term strategies:

1. In partnership with DoD, transform the nuclear stockpile through development of RRW, refurbishment of limited numbers of legacy designs, and accelerated dismantlement of the Cold War stockpile

2. Transform to a modernized, cost-effective nuclear weapons complex
3. Create a fully integrated and interdependent nuclear weapons complex, and
4. Drive the science and technology base essential for long-term national security

The sections below outline how the Laboratory, in the near term, is supporting Complex 2030. Long-term, The Laboratory will continue to support Complex 2030 but that support is contingent upon key decisions that affect the overall nuclear weapons complex.

Design and Assessment Capabilities

The Laboratory and LLNL are engaged in a competitive study of the RRW. The RRW will provide an alternative to refurbishing existing warheads. This may result in a series of designs that have reduced life-cycle costs, improved surety, and a more simple design that could be easier to manufacture and certify for use without underground testing. If the RRW mission is assigned to the Laboratory, a significant development and manufacturing development program would be anticipated.

Manufacturing, Surveillance, and Disposition Capabilities

The future stockpile is projected to be smaller and less diverse, leading to changes in the associated production requirements. These production requirements are currently being analyzed. The Laboratory is responsible for key nuclear components within the majority of active weapons systems. Most notably, TA-55 provides the only fully functioning plutonium facility used for R&D and pit manufacturing capability with the NWC. Although a new CPC is planned to be operational by 2030, TA-55 represents the only pit manufacturing capability until that time.

The Laboratory, through existing capabilities and planned nuclear facility consolidation and construction activities, has established a stable weapons infrastructure to meet near-term manufacturing needs and is poised to provide additional capacity for expanded pit production missions (for an accelerated RRW or current warheads) over the long-term. Ongoing or planned projects within the FYNSP include the following:

- CMRR
- RLWTF Upgrade Project
- TA-55 Radiography Facility
- TA-55 Infrastructure Reinvestment Project
- TA-18 Early Move
- Criticality Experimental Facility (CEF)
- TRU Waste Facility, and
- NMSSUP Phase II

Many of these projects are described in detail in Attachment A-1. Through these efforts, the Laboratory has provided NNSA with a means to address current requirements yet remain flexible and responsive to pending stockpile evaluations and associated decisions on future nuclear facilities.

Capability Consolidation

NNSA has been evaluating the capabilities within the complex to align limited current and projected resources against priority program needs. Results of these analyses have regularly included proposals to eliminate or reduce

4.1.1 Facilities and Infrastructure Overview

Per the Facilities Infrastructure Management System (FIMS) database at the start of FY07, the Laboratory currently consists of approximately 9.5 M GSF of space, of which 8.5 M are in permanent, government owned buildings, .5 M are trailers and temporary structures, and .5 M are in leased facilities. Laboratory facilities include office space, laboratories, storage, and miscellaneous structures.

Laboratory structures are a mix of buildings dating from the 1940's Manhattan Era (1943 to 1946) through major revitalization construction completed at TA-3 in the last decade. The overall square footage of the Laboratory has increased steadily over the past 60+ years; however, there were surges in construction at fundamental transition stages in the Laboratory's history. An outline and timeline of current facilities and infrastructure is given below. Additional details on historic buildings can be reviewed in Section 2.1.6.

The following is an overview of the major historical eras in which the Laboratory has developed and the impacts that shaped the buildings and infrastructure:

Manhattan Project

During the Manhattan Project (1943-1945) hundreds of primarily wooden and metal structures where built to military standards using rapid construction techniques. These new structures supplemented several dozen buildings and infrastructure from the Los Alamos Ranch School, which previously operated at the site.

During the 1950s, the Laboratory relocated key administrative and

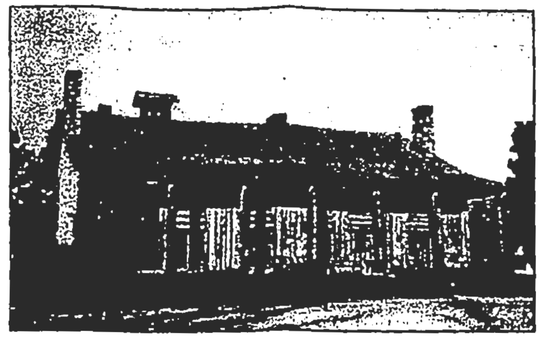


Figure 4-2: Fuller Lodge is one of the few remaining Ranch School buildings which was also utilized during the Manhattan Project

scientific facilities from the townsite to South Mesa. This was a significant event that promoted the development of the existing downtown commercial area and allowed for the future development of TA-3.

A handful of the Manhattan Project laboratory and research buildings remain, primarily located at more remote technical areas on the site. Almost all of these buildings are now designated as historically significant and efforts have been taken to stabilize and/or restore the structures. Unfortunately, some of these designated buildings were destroyed during the Cerro Grande Fire.

There are also a limited number of log homestead buildings and other structures

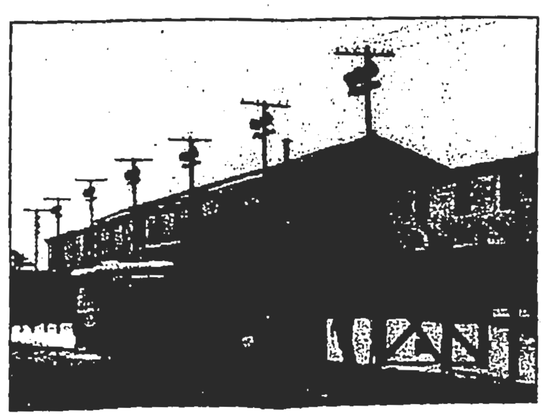


Figure 4-3: Main Tech Area security fence and guard station of the Manhattan Era (circa 1944)

located on the site, which date from the early 1900's. Many of these homestead era buildings were completely burned during the Cerro Grande Fire, while the remaining few are retained and protected as historical structures.

Post War

At the close of World War II, the Los Alamos site was demobilized and many senior scientists returned to their pre-war responsibilities. Work continued at a slower pace, but by the summer of 1946 two additional "Fat Man" type bombs were tested in Operation Crossroads at a location named "Bikini Atoll" in the Marshall Islands. This became a transition time for the Laboratory as it moved from a war effort function to a permanent weapons laboratory. By 1948, new types of fission weapons were being tested during the Sandstone tests. The Laboratory continued to design fission bombs into the 1950s. Work evolved around the military style buildings and infrastructure that had been put in place during the Manhattan Project. However, new buildings and building types were beginning to evolve.

Figure 4-4: Metal structures being constructed at TA-21 DP West, Post War Era (circa 1945)

Cold War

With the detonation of the first hydrogen bomb, "Mike", in 1952 at Eniwetok, the Laboratory entered into the thermonuclear age. It was during this time that the Laboratory expanded and vacated the Manhattan town-site, in favor

Figure 4-5: Administration Building built in 1956 during the Cold War Era

of relocating the complex across Los Alamos Canyon. This is the present site of TA-3, which is still the central core of Laboratory operations. The 1950's saw a significant introduction of new buildings, typically constructed out of cast-in-place concrete and new infrastructure systems were installed. The concrete designs suited the requirements of the time and reflected a heavy industry style that continued for decades. This surge in construction during the 1950's was in response to the early years of the Cold War. New construction became more moderate through the 1960's, at a time when above ground testing was banned by the 1963 Limited Test Ban Treaty. During the 1960's and 1970's, the Laboratory continued to focus on thermonuclear design and the Cold War continued. By the end of the 1960's new complexes were being planned. The construction of the Los Alamos Meson Physics Facility (LAMPF), now renamed LANSCE, was completed in 1972, significantly adding to the Laboratory's square footage and infrastructure. The facility is located on the lower south rim of Los Alamos Canyon. The facility is now over 30 years old. At about the same time the TA-55 plutonium facility was completed to replace the aging TA-21 facilities.

In the early 1980's, another construction surge occurred, which is associated with an era often termed the "Second Cold War" (1980 to 1985). Buildings retained their concrete theme, but more esthetics were pursued in style and form. Existing infrastructure was becoming dated which required some revitalization and expansion. This surge receded until the effective end of the Cold War, which officially concluded in 1989. Underground testing also declined steadily until all explosive nuclear testing ended in 1992, although the Comprehensive Test Ban Treaty was not ratified.

Stewardship and Non-Proliferation

Over the past decade, the Laboratory has transitioned into new missions, while maintaining nuclear weapons design and research as the central focus. National security attentions in the areas of Nuclear Stockpile Stewardship, Threat Reduction, and Nuclear Non-Proliferation have expanded as well as work in basic science. This has been reflected in the construction of new facilities in recent years. At TA-3 new buildings have replaced aging or inefficient structures and new construction at TA-55 has been required for operations. New building styles have been introduced. Metal frame with stucco or metal finishes, in a contemporary vein are more representative. The NSSB introduced a mid-rise window-wall design that is unique to the complex. Many of the more recent construction projects exhibit building technologies that employs steel superstructures and light-gage metal framing.

Leasing also makes up an important part of the Laboratory's overall property profile. As a significant participant in the local lease market, the Laboratory currently maintains annual leases that over 500,000 square feet. The leases are predominantly office space, located in Los Alamos County. Leasing has been a relatively steady element in meeting Laboratory space requirements over the past decade. For more detailed information, please refer to Section 4.1.3.2., Leased Space.

Figure 4-6: The MST office building is an example of steel frame and stucco construction that is more representative of the current Stewardship Era

In addition, the Laboratory does grant some property leases to other entities, including the Research Park site at TA-3 and the Icon Facility at TA-46.

4.1.2 Real Property Asset Management

The Laboratory's approach to effective property management is based on:

- Comprehensive and accurate property data bases